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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,934	01/30/2004	Yoshihiro Ochiai	018842.1288	3958
24735 7590 05/27/2009 BAKER BOTTS LLP C/O INTELLECTUAL PROPERTY DEPARTMENT THE WARNER, SUITE 1300 1299 PENNSYLVANIA AVE, NW WASHINGTON, DC 20004-2400				
EXAMINER				
HAMO, PATRICK				
ART UNIT		PAPER NUMBER		
3746				
NOTIFICATION DATE		DELIVERY MODE		
05/27/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptocorrespondence@bakerbotts.com  
darlene.hoskins@bakerbotts.com  
oneka.davis@bakerbotts.com

**Office Action Summary****Application No.**

10/766,934

**Applicant(s)**

OCHIAI, YOSHIHIRO

**Examiner**

PATRICK HAMO

**Art Unit**

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This action is in response to amendments filed 15 January 2009.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 3, 7 and 8 are rejected under 35 U.S.C. 102(a) as being anticipated by Umemura et al., US 2003/0021698.

#### **In regard to claim 1:**

Umemura discloses a control valve system for a swash plate compressor comprising a first valve 69,70 provided in a refrigerant circuit 67, 68; a second valve 46 arranged to open when a differential pressure between the upstream (PdH) and downstream (PdL) portions of the first valve reaches a predetermined value based on the input from electromagnetic actuator 51, thereby introducing gas from the compressor discharge 22 to a crank chamber 12, wherein the the upstream portion of the first valve also receives gas from discharge chamber 22; external information detecting means 76 and control means 75 are included for determining the opening of the first valve indirectly, as the opening of the first valve corresponds to the flow rate to be controlled by the control valve (paragraph 0039).

In regard to claim 3:

Discharge gas directly from the discharge chamber 22 (upstream of the first valve) is introduced into the crank chamber 12.

In regard to claims 7 and 8:

The first valve includes a pressure receiving portion 69 that presses the valve 69, 70 open when there is an upstream side pressure PdH and an equally sized portion (opposite side) receiving downstream side pressure PdL.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 9, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umemura.

In regard to claim 2:

Umemura discloses all of the limitations of claim 1 substantially as claimed, and disclose that the first and second valves are integrally mounted to each other.

However, Umemura discloses that the second valve (corresponding to the constant differential pressure valve) is electromagnetically actuated. It would have been obvious to one of ordinary skill in the art that either valve could be the electromagnetic valve and it would constitute a mere rearrangement of parts

In regard to claim 9:

Discharge gas directly from the discharge chamber 22 (upstream of the first valve) is introduced into the crank chamber 12.

In regard to claims 13 and 14:

The first valve includes a pressure receiving portion 69 that presses the valve 69, 70 open when there is an upstream side pressure  $PdH$  and an equally sized portion (opposite side) receiving downstream side pressure  $PdL$ .

Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umemura in view of Hayashi et al., US Pub. No. 2003/0031569.

Umemura discloses all of the limitations substantially as claimed except for the following: a cutoff valve disposed on the downstream side of the control valve.

However, Hayashi teaches a variable displacement compressor with a cutoff or check valve 38 downstream of the discharge chamber 132 and control valve 41 that is urged to stop when the inclination angle of the swash plate 23 is at a minimum (in which

case the air compressor is not operating), which stops the circulation of the refrigerant gas (p. 3, paragraph 38).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the variable displacement compressor of Umemura with the check valve of Hayashi to stop a refrigerant circulation when the compressor is not operating.

Claims 5, 6, 11, 12, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umemura in view of Ota et al., US 6,361,283.

Umemura discloses all of the limitations substantially as claimed except for the following taught by Ota:

In regard to claims 5, 6, 11 and 12:

Ota teaches a chamber 73, from where discharge gas flows into the crank chamber, directly upstream of a first valve and including tangential inlets 77.

In regard to claims 15 and 16:

Ota teaches temperature sensors 34-36 that provide information relating to the thermal load of the compressor, and the ECU shown in fig. 2 provides information about the state of the engine (col. 6, ll. 35-43).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the control valve of Umemura to include a discharge inflow

chamber with tangential inlets rather than the nominal discharge inflow chamber 65 shown in fig. 2, and that information about the stage of the engine would further be useful in the operation of a compressor that derives its power from the engine.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection. Namely, the applicant argues that Ota failed to teach that the throttling valve received its upstream pressure from the discharge of the compressor, as amended claim 1 now recites. However, as discussed in the rejection above, the reference to Umemura discloses this limitation in combination with the other limitations of independent claim 1.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICK HAMO whose telephone number is (571)272-3492. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Charles G Freay/  
Primary Examiner, Art Unit 3746

/Patrick Hamo/  
Patent Examiner, AU 3746